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EXAMINER	
BLACKWELL, JAMES H	
ART UNIT	PAPER NUMBER
2176	7

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Please find below and/or attached an Office communication concerning this application or proceeding.

Office Action Summary	Application No.	Applicant(s)	
	09/631,101	GUNN ET AL.	
	Examiner	Art Unit	
	James H Blackwell	2176	

-- The MAILING DATE of this communication appears on the cover sheet with the correspondence address --

Period for Reply

A SHORTENED STATUTORY PERIOD FOR REPLY IS SET TO EXPIRE 3 MONTH(S) FROM THE MAILING DATE OF THIS COMMUNICATION.

- Extensions of time may be available under the provisions of 37 CFR 1.136(a). In no event, however, may a reply be timely filed after SIX (6) MONTHS from the mailing date of this communication.
- If the period for reply specified above is less than thirty (30) days, a reply within the statutory minimum of thirty (30) days will be considered timely.
- If NO period for reply is specified above, the maximum statutory period will apply and will expire SIX (6) MONTHS from the mailing date of this communication.
- Failure to reply within the set or extended period for reply will, by statute, cause the application to become ABANDONED (35 U.S.C. § 133).
- Any reply received by the Office later than three months after the mailing date of this communication, even if timely filed, may reduce any earned patent term adjustment. See 37 CFR 1.704(b).

Status

1)☒ Responsive to communication(s) filed on *01 August 2000*.

2a)☐ This action is **FINAL**. 2b)☒ This action is non-final.

3)☐ Since this application is in condition for allowance except for formal matters, prosecution as to the merits is closed in accordance with the practice under *Ex parte Quayle*, 1935 C.D. 11, 453 O.G. 213.

Disposition of Claims

4)☒ Claim(s) *1-92* is/are pending in the application.

4a) Of the above claim(s) _____ is/are withdrawn from consideration.

5)☐ Claim(s) _____ is/are allowed.

6)☒ Claim(s) *1-36 and 38-92* is/are rejected.

7)☒ Claim(s) *37* is/are objected to.

8)☐ Claim(s) _____ are subject to restriction and/or election requirement.

Application Papers

9)☐ The specification is objected to by the Examiner.

10)☒ The drawing(s) filed on *01 August 2000* is/are: a)☒ accepted or b)☐ objected to by the Examiner.

Applicant may not request that any objection to the drawing(s) be held in abeyance. See 37 CFR 1.85(a).

Replacement drawing sheet(s) including the correction is required if the drawing(s) is objected to. See 37 CFR 1.121(d).

11)☐ The oath or declaration is objected to by the Examiner. Note the attached Office Action or form PTO-152.

Priority under 35 U.S.C. §§ 119 and 120

12)☒ Acknowledgment is made of a claim for foreign priority under 35 U.S.C. § 119(a)-(d) or (f).

a)☒ All b)☐ Some * c)☐ None of:

1.☐ Certified copies of the priority documents have been received.

2.☐ Certified copies of the priority documents have been received in Application No. _____.

3.☐ Copies of the certified copies of the priority documents have been received in this National Stage application from the International Bureau (PCT Rule 17.2(a)).

* See the attached detailed Office action for a list of the certified copies not received.

13)☐ Acknowledgment is made of a claim for domestic priority under 35 U.S.C. § 119(e) (to a provisional application) since a specific reference was included in the first sentence of the specification or in an Application Data Sheet. 37 CFR 1.78.

a) ☐ The translation of the foreign language provisional application has been received.

14)☐ Acknowledgment is made of a claim for domestic priority under 35 U.S.C. §§ 120 and/or 121 since a specific reference was included in the first sentence of the specification or in an Application Data Sheet. 37 CFR 1.78.

Attachment(s)

1) ☒ Notice of References Cited (PTO-892)
2) ☐ Notice of Draftsperson's Patent Drawing Review (PTO-948)
3) ☒ Information Disclosure Statement(s) (PTO-1449) Paper No(s) _____.
4) ☐ Interview Summary (PTO-413) Paper No(s). _____.
5) ☐ Notice of Informal Patent Application (PTO-152)
6) ☐ Other: .

DETAILED ACTION

Claim Rejections - 35 USC § 102

1. The following is a quotation of the appropriate paragraphs of 35 U.S.C. 102 that form the basis for the rejections under this section made in this Office action:

> A person shall be entitled to a patent unless –
>
> (e) the invention was described in a patent granted on an application for patent by another filed in the United States before the invention thereof by the applicant for patent, or on an international application by another who has fulfilled the requirements of paragraphs (1), (2), and (4) of section 371(c) of this title before the invention thereof by the applicant for patent.

The changes made to 35 U.S.C. 102(e) by the American Inventors Protection Act of 1999 (AIPA) and the Intellectual Property and High Technology Technical Amendments Act of 2002 do not apply when the reference is a U.S. patent resulting directly or indirectly from an international application filed before November 29, 2000. Therefore, the prior art date of the reference is determined under 35 U.S.C. 102(e) prior to the amendment by the AIPA (pre-AIPA 35 U.S.C. 102(e)).

2. Claims 1, 3, 5, 9, 14-21, 24, 30-32, 38-39, 46-47, 49-53, 56, 84, 87-90 are rejected under 35 U.S.C. 102(e) as being anticipated by Miller et al. (hereinafter Miller, U.S. Patent No. 5,896,321).

In regard to independent Claim 1 (and similarly to independent Claim 47), Miller teaches a text completion system that automatically displays a list of completion suggestions for a partial data entry in response to a pause in receipt of the data entry (Col. 7, lines 66-67, Col. 8, lines 1-2; compare to Claim 1 (and similarly to Claim 47), ***"... (a) receiving partial text entry"***). Miller also teaches that the text completion

system applies search criteria to the partial data entry. If the partial data entry satisfies the search criteria the text completion system obtains a prioritized list of word predictions for the partial data entry from the word prediction system (Col. 8, lines 2-5; compare to Claim 1 (and similarly to Claim 47), ***"(b) obtaining a dynamically generated list of completion candidates based on the partial text entry"***). Miller also teaches that the prioritized list of completion suggestions is typically displayed in a pop-up list box in a non-intrusive manner (Col. 8, lines 12-13; compare to Claim 1 (and similarly to Claim 47), ***"(c) displaying the list of completion candidates in a search list within the graphical user interface"***). Miller also teaches that the user may accept a completion suggestion from the list by touching a stylus to the display screen over the position of the desired completion suggestion (Col. 8, lines 17-19; compare to Claim 1 (and similarly to Claim 47), ***"(d) receiving a user input signal associated with the pointing device"***). Miller also teaches deactivating the search list in step (428) of Fig.4. Compare to Claim 1 (and similarly to Claim 47), ***"(e) ... deactivating the search list"***. Miller also teaches that once the completion suggestions have been displayed, the text completion system may receive an acceptance command associated with a particular one of the completion suggestions. In response to the acceptance command, the text completion system completes the partial data entry with the additional characters of the particular completion suggestion and discontinues the display of the prioritized list of completion suggestions (Col. 5, lines 28-35; compare to Claim 1 (and similarly to Claim 47), ***"(f) ... replacing the partial text entry with a completion candidate from the search list"***.

In regard to dependent Claim 3, Miller teaches display of a list of completion suggestions for a partial data entry in response to a pause in receipt of the data entry (Col. 7, lines 66-67, Col. 8, lines 1-2). Miller also teaches the user may accept a completion suggestion from the list by touching the stylus to the display screen (Col. 8, lines 17-20). Compare to Claim 3, ***"...when the pointing device is lifted up from an input-sensitive surface of the personal computing device without any significant movement once the search list is displayed"***. The pause in receipt of data entry would have suggested to one of ordinary skill in the art at the time of invention that the pointing device would have been lifted up from the input-sensitive surface providing the benefit of not invoking other functions.

In regard to dependent Claim 5, Miller teaches that the user may accept a completion suggestion from the list by touching a stylus to the display screen over the position of the desired completion suggestion, or by using the "arrow" keys to select a completion suggestion and the "enter" key to accept the selected completion suggestion (Col. 8, lines 17-21; compare to Claim 5, ***"...when a gesture is made with the pointing device towards a completion candidate in the search list to select the completion candidate and another user input signal is received indicating acceptance by the user of the completion candidate"***).

In regard to dependent Claim 9, Miller teaches that the user may accept a completion suggestion from the list by touching a stylus to the display screen over the position of the desired completion suggestion (Col. 8, lines 17-19; compare to Claim 9,

"... when a completion candidate in the search list is selected to replace the partial text entry").

In regard to dependent method Claim 14, Miller teaches in Fig. 2B the graphical user interface (201) after the user has entered an acceptance command for a selected text completion suggestion. The transition from Fig 2A to Fig. 2B illustrates the effect of a user command accepting the completion suggestion "extremely" for the partial data entry "ext". This acceptance command causes the partial data entry "ext" to be completed with the additional characters "remely". The display of the pop-up box is then discontinued (Col. 13, lines 20-29; compare to Claim 14, ***"... preparing to receive a new partial text entry once the partial text entry is replaced with a completion candidate from the search list"***).

In regard to dependent method Claim 15, Miller teaches that an acceptance command causes the partial data entry "ext" to be completed with the additional characters "remely". The display of the pop-up box is then discontinued (Col. 13, lines 25-29; compare to Claim 15, ***"... receiving an end-of-entry signal and preparing to receive a new partial text entry once the end-of-entry signal is received"***).

In regard to dependent method Claim 16, Miller teaches that the user may accept the selection by entering an acceptance command (Col. 13, lines 10-12; compare to Claim 16, ***"... receiving an end-of-entry signal once a predetermined character or key is selected, and preparing to receive a new partial text entry once the end-of-entry signal is received"***).

In regard to dependent method Claim 17, Miller teaches that an acceptance command causes the partial data entry "ext" to be completed with the additional characters "remely". The display of the pop-up box is then discontinued (Col. 13, lines 25-29; compare to Claim 17, ***"... preparing to receive a new partial text entry after the partial text entry is replaced with a completion candidate from the search list, but only if another user input signal is received that corresponds to an express user selection to terminate searching based on the partial text entry"***).

In regard to dependent Claim 18, Miller teaches that the user may accept a completion suggestion from the list by touching the stylus to the display screen over the position of the desired completion suggestion (Col. 4, lines 50-52; compare to Claim 18, ***"... displaying on the graphical user interface an indication of a currently active entry mode selected from at least one of a keyboard mode and a search mode"***).

In regard to dependent Claim 19, Miller teaches that if there are text completion suggestions that satisfy the display criteria, the "YES" branch is followed from step (414) to step (418), in which the completion suggestions are displayed in priority order in the list box (206) on the LCD display (47). The maximum number of completions suggestions displayed in the pop-up list box (206) may be a user-definable parameter with a default value of five (Col. 18, lines 31-38; compare with Claim 19, ***"... displaying on the graphical user interface a total number of completion candidates in a dictionary that begin with the partial text entry"***).

In regard to dependent Claim 20, Miller teaches that the user may change the selected completion suggestion by manipulating the position of the selection indicator

using the up and down "arrow" keys on the keyboard (Col. 13, lines 7-9; compare to Claim 20, ***"...changing selections within the search list")***.

In regard to dependent Claim 21, Miller teaches the text completion system (200) detects a pause of predefined duration in the entry of the string of characters (202). The pause duration may be a user-definable parameter with a default value of 0.5 sec. If a pause occurs that is longer than the predefined duration, the text completion system (200) determines whether the string of text (202) defines a partial data entry (204) that meets certain search criteria (Col. 12, lines 10-16; compare to Claim 21, ***"... pausing without any further processing of the partial text entry or the search list until a new input signal identifying another type of user selection is received"***).

In regard to dependent Claim 24, Miller teaches that if the partial data entry satisfies the search criteria, the text completion system obtains a prioritized list of word predictions from a word completion system (Col. 12, lines 29-31; compare to Claim 24, ***"... displaying the list of completion candidates in the search list as soon as they are retrieved by the candidate prediction system"***).

In regard to dependent Claim 30, Miller teaches that the word prediction system includes a dictionary having a list of static dictionary entries and a list of dynamic dictionary entries. The static dictionary entries are predefined for the word prediction system and do not change as the system is used. The word prediction system includes a probability score associated with each entry in the static dictionary entry. The probability score indicates the frequency of the occurrence of the particular dictionary in a large training corpus (Col. 8, lines 22-30), ***"... obtaining the dynamically generated***

list of completion candidates includes retrieving completion candidates from multiple dictionaries each having their own weight values for completion candidates and generating a final list of completion candidates for display in the search list based on weight values associated with the completion candidates retrieved from the multiple dictionaries").

In regard to dependent Claim 31, Miller teaches the word prediction system produces a prioritized list of word predictions by comparing the partial data entry to the entries in a dictionary to obtain a list of feasible words. The word prediction system submits the list of feasible words to plurality of word prediction experts and obtains a word prediction score for each entry in the list of feasible words from each expert. The word prediction system positions each word prediction in the prioritized list of word predictions based on a computed indication of likelihood of being a correct completion suggestion (Col. 5, lines 41-51; compare to Claim 31, ***"... obtaining the dynamically generated list of completion candidates includes retrieving completion candidates from multiple dictionaries each having their own weight function for completion candidates and generating a final list of completion candidates for display in the search list based on weight values associated with the completion candidates retrieved from the multiple dictionaries and based on which of the dictionaries each particular completion candidate is retrieved from"***).

In regard to dependent Claim 32, Miller teaches a non-intrusive pop-up list box occurring immediately under and to the right of the partial data entry (Col. 8, lines 12-15;

compare to Claim 32, ***"... displaying the search list in a fixed location on a graphical user interface"***).

In regard to dependent Claim 38, Miller teaches a non-intrusive pop-up list box occurring immediately under and to the right of the partial data entry (Col. 8, lines 12-15; compare to Claim 38, ***"... displaying the list of completion candidates from the list of completion candidates displayed in the search list near a last known set of position coordinates for the pointing device"***.

In regard to dependent Claim 39, Miller teaches a non-intrusive pop-up list box occurring immediately under and to the right of the partial data entry (Col. 8, lines 12-15; compare to Claim 39, ***"... at least one of the completion candidates from the list of completion candidates displayed in the search list near a last known set of position coordinates for the pointing device slightly offset from at least one of an x-axis or y-axis"***.

In regard to dependent Claim 46, Miller teaches a text completion system that automatically displays a list of completion suggestions for a partial data entry ... (see Abstract; compare to Claim 46, ***"A computer-readable medium having stored instructions for use in the execution of the method of Claim 1"***).

In regard to dependent Claim 49, Miller teaches that an acceptance command causes the partial data entry "ext" to be completed with the additional characters "remely". The display of the pop-up box is then discontinued (Col. 13, lines 25-29; compare to Claim 49, ***"... preparing to receive a new partial text entry once an end-of-entry signal is received via user interface"***).

In regard to dependent method Claim 50, Miller teaches that an acceptance command causes the partial data entry "ext" to be completed with the additional characters "remely". The display of the pop-up box is then discontinued (Col. 13, lines 25-29; compare to Claim 50, ***"... preparing to receive a new partial text entry after the partial text entry is replaced with a completion candidate from the search list, but only if another user input signal is received that corresponds to an express user selection to terminate searching based on the partial text entry"***).

In regard to dependent Claim 51, Miller teaches The user may accept a completion suggestion from the list by touching the stylus to the display screen over the position of the desired completion suggestion (Col. 4, lines 50-52; compare to Claim 51, ***"... displaying on the graphical user interface an indication of a currently active entry mode selected from at least one of a keyboard mode and a search mode"***).

In regard to dependent Claim 52, Miller teaches that if there are text completion suggestions that satisfy the display criteria, the "YES" branch is followed from step 414 to step 418, in which the completion suggestions are displayed in priority order in the list box 206 on the LCD display 47. The maximum number of completions suggestions displayed in the pop-up list box 206 may be a user-definable parameter with a default value of five (Col. 18, lines 31-38; compare with Claim 52, ***"... displaying on the graphical user interface a total number of completion candidates in a dictionary that begin with the partial text entry"***).

In regard to dependent Claim 53, Miller teaches that the text completion system (200) detects a pause of predefined duration in the entry of a string of characters (202).

If a pause occurs that is longer than the predefined duration, the text completion system (200) determines whether the string of text (202) defines a partial data entry (204) that meets the search criteria (Col. 12, lines 9-16; compare to Claim 53, "***... pausing without any further processing of the partial text entry or the search list until a new input signal identifying another type of user selection is received***").

In regard to dependent Claim 56, Miller teaches that the word prediction system includes a dictionary having a list of static dictionary entries and a list of dynamic dictionary entries. The static dictionary entries are predefined for the word prediction system and do not change as the system is used. The word prediction system includes a probability score associated with each entry in the static dictionary entry. The probability score indicates the frequency of the occurrence of the particular dictionary in a large training corpus (Col. 8, lines 22-30; compare to Claim 56, ***"... retrieving completion candidates from multiple dictionaries each having their own weight values for completion candidates"***). Miller also teaches that to produce a prioritized list of word predictions for a partial data entry, the word prediction system obtains a list of feasible words from the static and dynamic dictionaries. Feasible words are those complete words having the same prefix as the partial data entry. For each feasible word, the word prediction system obtains a word prediction score from each word prediction expert and computes a word value based on the feasible word's prediction scores and word ID. The word prediction system then positions each feasible word in the prioritized list based on the computed word value (Col. 8, lines 53-63; compare to Claim 56, ***"... generating a final list of completion candidates for display in the***

search list based on the weight values associated with the completion candidates retrieved from the multiple dictionaries").

In regard to independent Claim 84, Miller teaches a user interface usually consisting of a small QWERTY keyboard, a stylus, and a small touch-sensitive display screen (Col. 1, lines 13-17; compare to Claim 84, ***"... (a) an input interface for receiving user input signals based on actions with a pointing device"***). Miller also teaches a processing unit (21) (Col. 10, line 16; compare to Claim 84, ***"(b) a processing unit"***). Miller also teaches a text completion system that automatically displays a list of completion suggestions for a partial data entry in response to a pause in receipt of the data entry. The text completion system applies search criteria to the partial data entry. If the partial data entry satisfies the search criteria the text completion system obtains a prioritized list of word predictions for the partial data entry from the word prediction system (Col. 7, lines 66-67, Col. 8, lines 1-5). Miller also teaches that the prioritized list of completion suggestions is typically displayed in a pop-up list box in a non-intrusive manner (Col. 8, lines 12-13). Miller also teaches that the user may accept a completion suggestion from the list by touching a stylus to the display screen over the position of the desired completion suggestion (Col. 8, lines 17-19). Miller also teaches deactivating the search list in step (428) of Fig.4. Compare to Claim 84, ***"a computer-readable medium containing computer-readable instructions for directing the processing unit to assist with text generation and entry based on user input received via the input interface with the pointing device, by ..."***. Miller teaches a text completion system that automatically displays a

list of completion suggestions for a partial data entry in response to a pause in receipt of the data entry. (Col. 7, lines 66-67, Col. 8, lines 1-2; compare to Claim 84, ***"(i) receiving a partial text entry"***). Miller also teaches that the text completion system applies search criteria to the partial data entry. If the partial data entry satisfies the search criteria the text completion system obtains a prioritized list of word predictions for the partial data entry from the word prediction system (Col. 8, lines 2-5; compare to Claim 84, ***"(ii) obtaining a dynamically generated list of completion candidates based on the partial text entry"***). Miller also teaches that the prioritized list of completion suggestions is typically displayed in a pop-up list box in a non-intrusive manner (Col. 8, lines 12-13; compare to Claim 84, ***"(iii) displaying the list of completion candidates in a search list on a display device"***). Miller also teaches that the user may accept a completion suggestion from the list by touching a stylus to the display screen over the position of the desired completion suggestion (Col. 8, lines 17-19; compare to Claim 84, ***"(iv) receiving a user input associated with the pointing device from the input interface"***). Miller also teaches deactivating the search list in step (428) of Fig.4. Compare to Claim 84, ***"(v) ... deactivating the search list".*** Miller also teaches that once the completion suggestions have been displayed, the text completion system may receive an acceptance command associated with a particular one of the completion suggestions. In response to the acceptance command, the text completion system completes the partial data entry with the additional characters of the particular completion suggestion and discontinues the display of the prioritized list of completion suggestions (Col. 5, lines 28-35; compare to

Claim 84, ***"(vi) ... replacing the partial text entry with a completion candidate from the search list"***).

In regard to independent Claim 87, Miller teaches that if there are text completion suggestions that satisfy the display criteria, the "YES" branch is followed from step (414) to step (418), in which the completion suggestions are displayed in priority order in the list box (206) on the LCD display (47). The maximum number of completions suggestions displayed in the pop-up list box (206) may be a user-definable parameter with a default value of five. Step (418) is followed by step (420), in which the text completion system (200) may receive a scroll command, typically from the up or down "arrow" keys. If the text completion system (200) receives a scroll command, the "YES" branch is followed to step (422), in which the text completion system responds to the scroll command by changing the selected text completion suggestion. Step (422) and the "NO" branch from step (420) are followed by step (424), in which the text completion 200 may receive an acceptance command. The user may enter an acceptance by pressing the "enter" key. Alternatively, the user may enter a combined selection and acceptance command by touching the stylist (42) to the LCD display screen (47) at the area of the desired text completion suggestion (Col. 18, lines 32-52; compare to Claim 87,***"... (a) performing a search of a set of completion candidates to locate a plurality of possible completion candidates for completing the input string in response to a prior located possible completion candidate or a character selectable by a user; and (b) displaying at least one of: (i) the plurality of possible candidates; and (ii) characters selectable by the user"***.

In regard to dependent Claim 88, Miller teaches a user may accept a completion suggestion from the list by touching a stylus to the display screen over the position of the desired completion suggestion (Col. 8, lines 17-19; compare to Claim 88, ***"... selecting one of the plurality of possible completion candidates for use by an application in response to a user input"***).

In regard to dependent Claim 89, Miller teaches that if there are text completion suggestions that satisfy the display criteria, the "YES" branch is followed from step 414 to step 418, in which the completion suggestions are displayed in priority order in the list box 206 on the LCD display 47. The maximum number of completions suggestions displayed in the pop-up list box 206 may be a user-definable parameter with a default value of five (Col. 18, lines 31-38; compare with Claim 89, ***"... displaying on the graphical user interface a total number of completion candidates in a dictionary that begin with the input string"***).

In regard to dependent Claim 90, Miller teaches a text completion system that automatically displays a list of completion suggestions for a partial data entry in response to a pause in receipt of the data entry (Col. 7, lines 66-67, Col. 8, lines1-2; compare to Claim 90, ***"... displaying the plurality of possible completion candidates in a search list"***).

3. Claims 57 and 64 are rejected under 35 U.S.C. 102(e) as being anticipated by LaGrange et al. (hereinafter LaGrange, U.S. Patent No. 5,896,321).

In regard to independent Claim 57, LaGrange teaches a system comprising a conductive stylus used in conjunction with a capacitance sensitive touch pad, said system providing at least two different signals to an associated computer system. The stylus is a pen-like device having an actuable switch which when actuated substantially increases the capacitive disturbance caused by the conductive stylus on the touch pad. Before actuation, the stylus creates a capacitive disturbance sufficient for circuitry in the touch pad to measure as crossing a first predefined capacitive disturbance threshold when the foam covered conductive stylus tip is brought in contact with the surface of the touch pad. When the switch is actuated, the capacitive disturbance measured by the touch pad increases sufficient to cross a second predefined capacitive disturbance threshold. An associated computer program for drawing on a computer display places a cursor on the display when the first threshold is crossed. The computer program begins drawing on the display beginning at the cursor location when the switch is actuated causing the second threshold to be crossed. Placing a conductive foam cover over the conductive stylus tip results in the measured capacitive disturbance being amplified to thereby increase the magnitude of the capacitive disturbance of the stylus (see Abstract). Compare to Claim 57, ***"... (a) monitoring a set of position coordinates for the pointing device relative to a user interface for the personal computing device"***, and ***"(b) displaying a digital keyboard on the user interface at a last known set of coordinates for the pointing device whenever the digital keyboard is activated for user input"***.

In regard to independent Claim 64, LaGrange teaches a system comprising a conductive stylus used in conjunction with a capacitance sensitive touch pad, said system providing at least two different signals to an associated computer system. The stylus is a pen-like device having an actuable switch which when actuated substantially increases the capacitive disturbance caused by the conductive stylus on the touch pad. Before actuation, the stylus creates a capacitive disturbance sufficient for circuitry in the touch pad to measure as crossing a first predefined capacitive disturbance threshold when the foam covered conductive stylus tip is brought in contact with the surface of the touch pad. When the switch is actuated, the capacitive disturbance measured by the touch pad increases sufficient to cross a second predefined capacitive disturbance threshold. An associated computer program for drawing on a computer display places a cursor on the display when the first threshold is crossed. The computer program begins drawing on the display beginning at the cursor location when the switch is actuated causing the second threshold to be crossed. Placing a conductive foam cover over the conductive stylus tip results in the measured capacitive disturbance being amplified to thereby increase the magnitude of the capacitive disturbance of the stylus (see Abstract). Compare to Claim 64, ***"... (a) ... monitoring a set of position coordinates for the pointing device relative to a user interface for the personal computing device;*** and ***(b) ... displaying a digital keyboard on the user interface at a last known set of coordinates for the pointing device whenever the digital keyboard is activated for user input"***.

Claim Rejections - 35 USC § 103

4. The following is a quotation of 35 U.S.C. 103(a) which forms the basis for all obviousness rejections set forth in this Office action:

> (a) A patent may not be obtained though the invention is not identically disclosed or described as set forth in section 102 of this title, if the differences between the subject matter sought to be patented and the prior art are such that the subject matter as a whole would have been obvious at the time the invention was made to a person having ordinary skill in the art to which said subject matter pertains. Patentability shall not be negatived by the manner in which the invention was made.

5. Claims 2, 48, 81, 83, 85-86 are rejected under 35 U.S.C. 103(a) as being unpatentable over Miller in view of Appleman et al. (hereinafter Appleman, U.S. Patent No. 6,539,421).

In regard to dependent Claim 2, Miller fails to teach *... dynamically obtaining a refined list of completion candidates based on one of the completion candidates from the search list, displaying the refined list of completion candidates in the search list for further user selection, and monitoring for a further user input signal associated with the pointing device*. However, Appleman teaches a protocol for addressing a message to a member of a plurality of potential message recipients may include one or more user-selectable signals for modifying auto-completion behavior, and a predetermined criterion for selecting a subset of the plurality of potential message recipients (Col. 3, lines 33-39; compare to Claim 2, ***"...dynamically obtaining a refined list of completion candidates based on one of the completion candidates from the search list, displaying the refined list of completion candidates in the search list for further user selection, and monitoring for a further user input signal associated with the pointing device"***. Appleman does not specifically teach

monitoring for a further user input signal associated with the pointing device. However, one of ordinary skill in the art at the time of invention would have expected that once a refined list of completion candidates would have been offered for user selection, that the next step would have been selection of a member of the refined or subset list with the pointing device thereby providing the benefit of addressing a message.

In regard to dependent Claim 48, Miller fails to teach *dynamically obtaining a refined list of completion candidates based on one of the completion candidates from the search list*. However, Appleman teaches a protocol for addressing a message to a member of a plurality of potential message recipients may include one or more user-selectable signals for modifying auto-completion behavior, and a predetermined criterion for selecting a subset of the plurality of potential message recipients. Each potential message recipient may have an associated address (Col. 3, lines 33-39; compare to Claim 48, ***"... dynamically obtaining a refined list of completion candidates based on one of the completion candidates from the search list"***, and ***"... displaying the refined list of completion candidates in the search list for further user selection"***, and ***"... monitoring for a further user input signal associated with the pointing device"***). Appleman does not specifically teach *monitoring for a further user input signal associated with the pointing device*. However, one of ordinary skill in the art at the time of invention would have expected that once a refined list of completion candidates would have been offered for user selection, that the next step would have been selection of a member of the refined or subset list with the pointing device thereby providing the benefit of addressing a message.

In regard to independent Claim 81, Miller teaches that the user may accept a completion suggestion from the list by touching a stylus to the display screen over the position of the desired completion suggestion (Col. 8, lines 17-19; compare to Claim 81,***"... (a) receiving a user input signal"***. Miller also teaches in step (414) that an answer of NO discontinues previous display of completion suggestions (if any) (step 416) and goes to the end condition step (432), which goes to the beginning step (402). Compare to Claim 81, ***"(b) if the user input signal corresponds to declining all completion candidates displayed in the search list, terminating automated searching with the search list with no consequence to the text being entered into the personal computing device"***. Miller also teaches in Fig. 4 step (424) that an answer of YES completes partial data entry with additional characters of the selected completion suggestions (428), to discontinue display of completion suggestions (428), update word prediction system (430) and go to step (402) (432). Compare to Claim 81, ***"(c) if the user input signal corresponds to accepting a completion candidate from the search list to replace the partial text entry and to terminate automated searching, terminating the automated searching with the search list and modifying the partial text entry to become the accepted completion candidate"***). Miller fails to teach *if the user signal corresponds to selecting a completion candidate from the search list to initiate further searching, obtaining a new list of completion candidates based on the selected completion candidate and displaying the new list of completion candidates in the search list for further selection*. However, Appleman teaches a protocol for addressing a message to a member of a plurality of potential

message recipients may include one or more user-selectable signals for modifying auto-completion behavior, and a predetermined criterion for selecting a subset of the plurality of potential message recipients. Each potential message recipient may have an associated address (Col. 3, lines 33-39; compare to Claim 81, ***"(d) if the user signal corresponds to selecting a completion candidate from the search list to initiate further searching, obtaining a new list of completion candidates based on the selected completion candidate and displaying the new list of completion candidates in the search list for further selection"***). It would have been obvious to one of ordinary skill in the art at the time of invention to combine the teachings of Miller and Appleman providing the benefit of addressing a message.

In regard to independent Claim 83, Miller teaches a text completion system that automatically displays a list of completion suggestions for a partial data entry in response to a pause in receipt of the data entry. (Col. 7, lines 66-67, Col. 8, lines 1-2; compare to Claim 83, ***"... (a) receiving partial text entry"***). Miller also teaches that the text completion system applies search criteria to the partial data entry. If the partial data entry satisfies the search criteria the text completion system obtains a prioritized list of word predictions for the partial data entry from the word prediction system (Col. 8, lines 2-5; compare to Claim 83, ***"(b) obtaining a dynamically generated list of completion candidates from a dictionary based on the partial text entry"***). Miller also teaches that the prioritized list of completion suggestions is typically displayed in a pop-up list box in a non-intrusive manner (Col. 8, lines 12-13; compare to Claim 83, ***"(c) displaying the list of completion candidates in a search list within a graphical***

user interface"). Miller also teaches that the user may accept a completion suggestion from the list by touching a stylus to the display screen over the position of the desired completion suggestion (Col. 8, lines 17-19; compare to Claim 83, ***"(d) receiving a user input signal associated with the pointing device"***). Miller also teaches deactivating the search list in step (428) of Fig.4. Compare to Claim 83, ***"(e) ... deactivating the search list"***. Miller also teaches that once the completion suggestions have been displayed, the text completion system may receive an acceptance command associated with a particular one of the completion suggestions. In response to the acceptance command, the text completion system completes the partial data entry with the additional characters of the particular completion suggestion and discontinues the display of the prioritized list of completion suggestions (Col. 5, lines 28-35; compare to Claim 83, ***"(f) ... replacing the partial text entry with a completion candidate from the search list"***). Miller does not teach *dynamically obtaining a refined list of completion candidates based on one of the completion candidates from the search list, displaying the refined list of completion candidates in the search list for further user selection, and monitoring for a further user input signal associated with the pointing device*. However, Appleman teaches a protocol for addressing a message to a member of a plurality of potential message recipients may include one or more user-selectable signals for modifying auto-completion behavior, and a predetermined criterion for selecting a subset of the plurality of potential message recipients. Each potential message recipient may have an associated address (Col. 3, lines 33-39; compare to Claim 83, ***"(g) ... dynamically obtaining a refined list of completion candidates***

based on one of the completion candidates from the search list, displaying the refined list of completion candidates in the search list for further user selection, and monitoring for a further user input signal associated with the pointing device"). Appleman does not specifically teach *monitoring for a further user input signal associated with the pointing device*. However, one of ordinary skill in the art at the time of invention would have expected that once a refined list of completion candidates would have been offered for user selection, that the next step would have been selection of a member of the refined or subset list with the pointing device thereby providing the benefit of addressing a message.

In regard to dependent Claim 85, Miller fails to teach a *computer-readable instructions to dynamically obtain a refined list of completion candidates based on one of the completion candidates from the search list and to display a refined list of completion candidates in the search list for further user selection....* However, Appleman teaches a protocol for addressing a message to a member of a plurality of potential message recipients may include one or more user-selectable signals for modifying auto-completion behavior, and a predetermined criterion for selecting a subset of the plurality of potential message recipients. Each potential message recipient may have an associated address (Col. 3, lines 33-39; compare to Claim 85, ***"... computer-readable instructions to dynamically obtain a refined list of completion candidates based on one of the completion candidates from the search list and to display a refined list of completion candidates in the search list for further user selection ..."***). One of ordinary skill in the art at the time of invention would have been

motivated to combine the teachings of Miller and Appleman providing the benefit of addressing a message.

In regard to independent Claim 86, Miller teaches a text completion system that automatically displays a list of completion suggestions for a partial data entry in response to a pause in receipt of the data entry (Col. 7, lines 66-67, Col. 8, lines 1-2; compare to Claim 86, ***"(a) generating a partial text entry containing one or more characters selected from a digital keyboard with a pointing device"***). Miller also teaches that the text completion system applies search criteria to the partial data entry. If the partial data entry satisfies the search criteria the text completion system obtains a prioritized list of word predictions for the partial data entry from the word prediction system (Col. 8, lines 2-5; compare to Claim 86, "***(b) activating an interactive search list containing a list of all possible completion candidates found in a dictionary according to a predefined metric and based on the partial text entry").*** Miller also teaches that if the partial data entry satisfies the search criteria the text completion system obtains a prioritized list of word predictions for the partial data entry from the word prediction system (Col. 7, lines 66-67, Col. 8, lines 1-5). Miller also teaches that the prioritized list of completion suggestions is typically displayed in a pop-up list box in a non-intrusive manner (Col. 8, lines 12-13). Miller also teaches that the user may accept a completion suggestion from the list by touching a stylus to the display screen over the position of the desired completion suggestion (Col. 8, lines 17-19). Compare to Claim 86, ***"(c) if a completion candidate appears in the interactive search list matching a desired complete entry for the partial text entry, selecting by gesture***

the completion candidates and indicating completion of the partial text entry in the text". Miller does not teach *if a partially successful completion candidate appears in the interactive search list, selecting by gesture the partially successful completion candidate from the interactive search list and initiating a further automated search to obtain and display a refined list of completion candidates in the interactive search list for selection or further searching*. However, Appleman teaches a protocol for addressing a message to a member of a plurality of potential message recipients may include one or more user-selectable signals for modifying auto-completion behavior, and a predetermined criterion for selecting a subset of the plurality of potential message recipients. Each potential message recipient may have an associated address (Col. 3, lines 33-39; compare to Claim 86, ***"(d) if a partially successful completion candidate appears in the interactive search list, selecting by gesture the partially successful completion candidate from the interactive search list and initiating a further automated search to obtain and display a refined list of completion candidates in the interactive search list for selection or further searching"***). One of ordinary skill in the art at the time of invention would have been motivated to combine the teachings of Miller and Appleman providing the benefit of addressing a message.

6. Claim 4 is rejected under 35 U.S.C. 103(a) as being unpatentable over Miller.

In regard to dependent Claim 4, Miller teaches that the user may accept a completion suggestion from the list by touching a stylus to the display screen to the display screen over the position of the desired completion suggestion, or by using the

arrow keys to select a completion suggestion and the "enter" key to accept the selected completion suggestion (Col. 8, lines 17-21; compare to Claim 4, ***"... when a button on a mouse is selected"***). Miller does not explicitly teach when a *button on a mouse is selected*. However, one of ordinary skill in the art at the time of invention would have been motivated to assume that any combination of regular keys, function keys, or mouse buttons could have been used with the pointing device to achieve the desired effect.

7. Claims 6, 8, 10-11, and 13 are rejected under 35 U.S.C. 103(a) as being unpatentable over Miller in view of Agulnick et al. (hereinafter Agulnick, U.S. Patent No. 5,347,295).

In regard to dependent method Claim 6, Miller fails to teach *when a gesture is made with the pointing device onto a completion candidate in the search list to select the completion candidate and the completion candidate remains selected for a predetermined time limit*. However, Agulnick teaches an event begins when the stylus touches the front surface of the display, input is then terminated in one of three ways: (a) by lifting the stylus from the surface; (b) by a series of strokes followed by a final lift of the stylus and lack of contact for a specific time interval, or "timeout" (Col. 1, lines 66-68; Col. 2, lines 1-3; compare to Claim 6, ***"... when a gesture is made with the pointing device onto a completion candidate in the search list to select the completion candidate and the completion candidate remains selected for a predetermined time limit"***). One of ordinary skill in the art at the time of invention

would have been motivated to combine the teachings of Miller and Agulnick providing the benefit of sensing pen-up and pen-down gestures on a touch-sensitive display.

In regard to dependent Claim 8, Miller fails to teach *when a motion is made with the pointing device in a particular direction associated with a desired completion candidate for at least a predetermined distance while the pointing device is in an active state and a further action is made with the pointing device to accept the desired completion candidate.* However, Agulnick teaches that in general, the user will bring the tip of the stylus towards the screen ... and upon contact with the layer a gesture may be drawn. When the user is finished drawing the gesture, the stylus tip is simply removed from the layer and the system automatically detects this motion and processes the gesture (Col. 8, lines 54-64; compare with Claim 8, ***"... when a motion is made with the pointing device in a particular direction associated with a desired completion candidate for at least a predetermined distance while the pointing device is in an active state and a further action is made with the pointing device to accept the desired completion candidate"***). It would have been obvious to one of ordinary skill in the art at the time of invention to combine the teachings of Miller and Agulnick providing the benefit of processing a gesture.

In regard to dependent Claim 10, Miller fails to teach *when a completion candidate in the search list remains selected for a predetermined time limit.* However, Agulnick teaches an event begins when the stylus touches the front surface of the display, Input is then terminated in one of three ways: (a) by lifting the stylus from the surface; (b) by a series of strokes followed by a final lift of the stylus and lack of contact

for a specific time interval, or "timeout" (Col. 1, lines 66-68; Col. 2, lines 1-3; compare to Claim 10, ***"... when a completion candidate in the search list remains selected for a predetermined time limit"***). It would have been obvious to one of ordinary skill in the art at the time of invention to combine the teachings of Miller and Agulnick providing the benefit of processing a gesture.

In regard to dependent Claim 11, Miller fails to teach that *when a gesture is made with the pointing device towards a completion candidate in the search list in order to select the completion candidate and the completion candidate remains selected for a predetermined time limit*. However, Agulnick teaches an event begins when the stylus touches the front surface of the display, Input is then terminated in one of three ways: (a) by lifting the stylus from the surface; (b) by a series of strokes followed by a final lift of the stylus and lack of contact for a specific time interval, or "timeout" (Col. 1, lines 66-68; Col. 2, lines 1-3; compare to Claim 11, ***"... when a gesture is made with the pointing device towards a completion candidate in the search list in order to select the completion candidate and the completion candidate remains selected for a predetermined time limit"***). It would have been obvious to one of ordinary skill in the art at the time of invention to combine the teachings of Miller and Agulnick providing the benefit of processing a gesture.

In regard to dependent Claim 13, Miller fails to teach that *when a gesture is made with the pointing device in a particular direction for at least a predetermined minimum distance in order to select the completion candidate and the completion candidate remains selected for a predetermined time limit*. However, Agulnick teaches

an event begins when the stylus touches the front surface of the display, Input is then terminated in one of three ways: (a) by lifting the stylus from the surface; (b) by a series of strokes followed by a final lift of the stylus and lack of contact for a specific time interval, or "timeout" (Col. 1, lines 66-68; Col. 2, lines 1-3; compare to Claim 13, ***"... when a gesture is made with the pointing device in a particular direction for at least a predetermined minimum distance in order to select the completion candidate and the completion candidate remains selected for a predetermined time limit"***). It would have been obvious to one of ordinary skill in the art at the time of invention to combine the teachings of Miller and Agulnick providing the benefit of processing a gesture.

8. Claim 7 is rejected under 35 U.S.C. 103(a) as being unpatentable over Miller in view of Forcier (U.S. Patent No. 5,220,649).

In regard to dependent Claim 7, Miller fails to teach *...when a gesture is made with the pointing device in a direction associated with a desired completion candidate without the pointing device necessarily moving towards or onto a portion of the graphical user interface where the completion candidate is displayed.* However, Forcier teaches a Pen Moved Event (see Fig. 3C1, 3C2; compare to Claim 7, ***"...when a gesture is made with the pointing device in a direction associated with a desired completion candidate without the pointing device necessarily moving towards or onto a portion of the graphical user interface where the completion candidate is displayed"***. It would have been obvious to one of ordinary skill in the art at the time of

invention to combine the teachings of Miller and Forcier providing the benefit of inserting space wrapping and moving forward any words that cross the right margin.

9. Claims 12, 26, and 92 are rejected under 35 U.S.C. 103(a) as being unpatentable over Miller in view of Niemeier (U.S. Patent No. 5,574,482).

In regard to dependent Claim 12, Miller fails to teach *when a predetermined character or key is selected*. However, Niemeier teaches a QWERTY style keyboard with various letters of the alphabet being selected on a touch-sensitive screen with an input device (see Figs. 1-29; compare to Claim 12, ***"... when a predetermined character or key is selected"***). It would have been obvious to one of ordinary skill in the art at the time of invention to combine the teachings of Miller and Niemeier providing the benefit of detecting a keystroke on a touch-sensitive screen.

In regard to dependent Claim 26, Miller fails to teach *configuring a digital keyboard to include a plurality of characters assigned to predetermined locations within a layout for the digital keyboard according to a predetermined frequency distribution associated with the plurality of characters, the plurality of characters including less commonly used characters and more commonly used characters based on the predetermined frequency distribution*. However, Niemeier teaches a digital keyboard including a plurality of characters in predetermined locations based on any number of layouts. Once a key is depressed, a list of temporary keys predetermined by the study of word frequency and the sequence of letters in the language appear around the depressed key. In this arrangement the most often used keys or sequences of keys are

located closer to the depressed key than the lesser used key or keys (Col. 5, lines 15-25, Figs 4-32; compare to Claim 26, ***"... (a) configuring a digital keyboard to include a plurality of characters assigned to predetermined locations within a layout for the digital keyboard according to a predetermined frequency distribution associated with the plurality of characters, the plurality of characters including less commonly used characters and more commonly used characters based on the predetermined frequency distribution"*** and ***"(b) displaying the digital keyboard on a graphical user interface with the less commonly used characters displayed substantially further from a center of the digital keyboard that the more commonly used characters"***). It would have been obvious to one of ordinary skill in the art at the time of invention to combine the teachings of Miller and Niemeier providing the benefit of using a virtual keyboard in an efficient manner.

In regard to dependent Claim 92, Miller fails to teach *configuring a digital keyboard to include a plurality of characters assigned to predetermined locations within a layout for the digital keyboard according to a predetermined frequency distribution associated with the plurality of characters, the plurality of characters including less commonly used characters and more commonly used characters based on the predetermined frequency distribution* and *displaying the digital keyboard on a graphical user interface with the less commonly used characters displayed substantially further from a center of the digital keyboard that the more commonly used characters.* However, Niemeier teaches a digital keyboard including a plurality of characters in predetermined locations based on any number of layouts. Once a key is depressed, a

list of temporary keys predetermined by the study of word frequency and the sequence of letters in the language appear around the depressed key. In this arrangement the most often used keys or sequences of keys are located closer to the depressed key than the lesser used key or keys (Col. 5, lines 15-25, Figs 4-32; compare to Claim 92, ***"... (a) configuring a digital keyboard to include a plurality of characters assigned to predetermined locations within a layout for the digital keyboard according to a predetermined frequency distribution associated with the plurality of characters, the plurality of characters including less commonly used characters and more commonly used characters based on the predetermined frequency distribution"*** and ***"(b) displaying the digital keyboard on a graphical user interface with the less commonly used characters displayed substantially further from a center of the digital keyboard that the more commonly used characters"***). It would have been obvious to one of ordinary skill in the art at the time of invention to combine the teachings of Miller and Niemeier providing the benefit of using a virtual keyboard in an efficient manner.

10. Claims 22-23, 25, 33, 54-55, and 91 are rejected under 35 U.S.C. 103(a) as being unpatentable over Miller in view of Skinner et al. (hereinafter Skinner, U.S. Patent No. 6,661,920).

In regard to dependent Claim 22, Miller fails to teach *displaying the digital keyboard on a user interface of the personal computing device when a user is entering text a keystroke at a time.* However, Skinner teaches a "virtual keyboard". Characters

can be entered into the computer system by a user interacting with (e.g., tapping) the displayed characters of the virtual keyboard (see Abstract; compare to Claim 22, ***"... (a) displaying the digital keyboard on a user interface of the personal computing device when a user is entering text a keystroke at a time".*** Skinner does not specifically teach *monitoring for user input*. However, Miller teaches a text completion system that monitors the entry of a stream of characters into a data file associated with a program module running on a computer system. The stream of characters defines a plurality of complete data entries followed by a partial data entry, which are displayed on a display screen. (Col. 4, lines 63-67; Col. 5, line 1; compare to Claim 22, "***(b) monitoring for user input".*** Miller also teaches a text completion system that automatically displays a list of completion suggestions for a partial data entry in response to a pause in receipt of the data entry (Col. 7, lines 66-67, Col. 8, lines 1-2; compare to Claim 22, ***"(c) if the user input corresponds to activating the search list, replacing the digital keyboard with the search list and waiting for further user input".*** Miller also teaches at step (410) of Fig. 4 if the partial data entry does not satisfy the search criteria, then go to step (402) which waits to receive another character. Compare to Claim 22, ***"(d) if the user input corresponds to terminating use of the search list once activated, replacing the search list with the digital keyboard and waiting for further user input"***. It would have been obvious to one of ordinary skill in the art at the time of invention to combine the teachings of Miller and Skinner providing the benefit of displaying and using a virtual keyboard.

In regard to dependent Claim 23, Miller fails to teach *that at least part of the partial text entry is received via a digital keyboard, the method further comprising displaying simultaneously both the digital keyboard and the search list*. However, Skinner teaches a method and system for providing simultaneous data entry for a computer system having both on-screen keyboard entry and mechanisms for handwriting recognition entry (Col.2, lines 54-57; compare to Claim 23, ***"... at least part of the partial text entry is received via a digital keyboard, the method further comprising displaying simultaneously both the digital keyboard and the search list"***). It would have been obvious to one of ordinary skill in the art at the time of invention to combine the teachings of Miller and Skinner providing the benefit of displaying and using a virtual keyboard.

In regard to dependent Claim 25, Miller fails to teach that *at least part of the partial text entry is received via a digital keyboard, the method further comprising swapping between displaying one digital keyboard layout and at least one other digital keyboard layout in response to user input*. However, Skinner teaches display of multiple keyboards controlled by buttons. In this case, button (430) relates to alphabetic characters, button (440) relates to numeric characters, and button (450) relates to international characters (see Fig. 7a); compare to Claim 25, ***"... at least part of the partial text entry is received via a digital keyboard, the method further comprising swapping between displaying one digital keyboard layout and at least one other digital keyboard layout in response to user input"***). It would have been obvious to

one of ordinary skill in the art at the time of invention to combine the teachings of Miller and Skinner providing the benefit of displaying and using a virtual keyboard.

In regard to dependent Claim 33, Miller fails to teach that *at least part of the partial text entry is received via a digital keyboard, the method further comprising displaying the search list docked with the digital keyboard.* However, Skinner teaches a method and system for providing simultaneous data entry for a computer system having both on-screen keyboard entry and mechanisms for handwriting recognition entry (Col.2, lines 54-57; compare to Claim ***33, "... at least part of the partial text entry is received via a digital keyboard, the method further comprising displaying the search list docked with the digital keyboard"***). It would have been obvious to one of ordinary skill in the art at the time of invention to combine the teachings of Miller and Skinner providing the benefit of displaying and using a virtual keyboard.

In regard to dependent Claim 54, Miller fails to teach *displaying a digital keyboard on a display device when a user is entering text a keystroke at a time into a personal computing device with a pointing device.* However, Skinner teaches a "virtual keyboard". Characters can be entered into the computer system by a user interacting with (e.g., tapping) the displayed characters of the virtual keyboard (see Abstract; compare to Claim 54, ***"(a) ... displaying a digital keyboard on a display device when a user is entering text a keystroke at a time into a personal computing device with a pointing device"***). Skinner fails to specifically teach *monitoring for user input.* However, Miller teaches a text completion system that monitors the entry of a stream of characters into a data file associated with a program module running on a

computer system. The stream of characters defines a plurality of complete data entries followed by a partial data entry, which are displayed on a display screen. (Col. 4, lines 63-67; Col. 5, line 1; compare to Claim 54, ***"(b) ... monitoring for user input"***). Miller also teaches a text completion system that automatically displays a list of completion suggestions for a partial data entry in response to a pause in receipt of the data entry (Col. 7, lines 66-67, Col. 8, lines 1-2; compare to Claim 54, ***(c) ... replacing the digital keyboard with the search list and waiting for further user input if the user input corresponds to activating the search list"***). Miller also teaches at step (410) of Fig. 4 if the partial data entry does not satisfy the search criteria, then go to step (402) which waits to receive another character. Compare to Claim 54, ***" (d) ... replacing the search list with the digital keyboard and waiting for further user input if the user input corresponds to terminating use of the search list once activated".*** It would have been obvious to one of ordinary skill in the art at the time of invention to combine the teachings of Miller and Skinner providing the benefit of a text auto-completion for a touch-sensitive screen device.

In regard to dependent Claim 55, Miller fails to teach *receiving characters via a digital keyboard.* However, Skinner teaches a "virtual keyboard". Characters can be entered into the computer system by a user interacting with (e.g., tapping) the displayed characters of the virtual keyboard (see Abstract; compare to Claim 55, ***"... (a) ... receiving characters via a digital keyboard"***). Miller also fails to teach *displaying simultaneously both the digital keyboard and the search list.* However, Skinner also teaches a method and system providing simultaneous data entry for a computer system

having both on-screen keyboard entry and mechanism for handwriting recognition entry (see Abstract; compare to Claim 55, ***"... (b) ... displaying simultaneously both the digital keyboard and the search list"***). It would have been obvious to one of ordinary skill in the art at the time of invention to combine the teachings of Miller and Skinner providing the benefit of a text auto-completion for a touch-sensitive screen device.

In regard to dependent Claim 91, Miller fails to teach *displaying a digital keyboard on a user interface when a user is entering characters a keystroke at a time*. However, Skinner teaches a "virtual keyboard". Characters can be entered into the computer system by a user interacting with (e.g., tapping) the displayed characters of the virtual keyboard (see Abstract; compare to Claim 91, ***"... (a) displaying a digital keyboard on a user interface when a user is entering characters a keystroke at a time"***). Skinner fails to teach *monitoring the user input*. However, Miller teaches a text completion system that monitors the entry of a stream of characters into a data file associated with a program module running on a computer system. The stream of characters defines a plurality of complete data entries followed by a partial data entry, which are displayed on a display screen. (Col. 4, lines 63-67; Col. 5, line 1; compare to Claim 91, ***"(b) monitoring the user input"***). Miller also teaches a text completion system that automatically displays a list of completion suggestions for a partial data entry in response to a pause in receipt of the data entry (Col. 7, lines 66-67, Col. 8, lines 1-2; compare to Claim 91, ***"(c) if the user input corresponds to activating the search list, replacing the digital keyboard with the search list and waiting for further user input"***). Miller also teaches at step (410) of Fig. 4 if the partial data entry

does not satisfy the search criteria, then go to step (402) which waits to receive another character. Compare to Claim 91, ***"(d) if the user input corresponds to terminating use of the search list once activated, replacing the search list with the digital keyboard and waiting for further user input"***. It would have been obvious to one of ordinary skill in the art at the time of invention to combine the teachings of Miller and Skinner providing the benefit of displaying and using a virtual keyboard.

11. Claims 27-29, 34 are rejected under 35 U.S.C. 103(a) as being unpatentable over Miller in view of Skinner and in further view of Lee (U.S. Patent No. 6,292,179).

In regard to dependent Claim 27, Miller fails to teach *characters within the digital keyboard are displayed in rings with the characters in at least one ring organized alphabetically in a clockwise order.* However, Lee teaches a software keyboard system using the trace direction of a stylus, in which a key includes a plurality of key codes, and thus the key code is selected in accordance with the trace of the stylus drawn on the key (Col. 1, lines 52-56; Figs. 4a-b, 5a-b; compare to Claim 27, ***"... characters within the digital keyboard are displayed in rings with the characters in at least one ring organized alphabetically in a clockwise order"***). Lee fails to specifically teach *... rings with the characters in at least one ring organized alphabetically in a clockwise order.* However, Lee does teach a method that saves screen space for characters of a digital keyboard. Therefore, it would have been obvious to one of ordinary skill in the art at the time of invention to combine the teachings of Miller, Skinner and Lee providing the benefit of more efficient use of screen space.

In regard to dependent Claim 28, Miller fails to teach that *characters within the digital keyboard are displayed in rings with the characters in at least one ring organized alphabetically in a counter-clockwise order.* However, Lee teaches a software keyboard system using the trace direction of a stylus, in which a key includes a plurality of key codes, and thus the key code is selected in accordance with the trace of the stylus drawn on the key (Col. 1, lines 52-56; Figs. 4a-b, 5a-b; compare to Claim 28, ***"... characters within the digital keyboard are displayed in rings with the characters in at least one ring organized alphabetically in a counter-clockwise order"***). Lee fails to specifically teach a *ring organized alphabetically in a counter-clockwise order.* However, Lee does teach a method that saves screen space for characters of a digital keyboard. Therefore, it would have been obvious to one of ordinary skill in the art at the time of invention to combine the teachings of Miller, Skinner and Lee providing the benefit of more efficient use of screen space.

In regard to dependent Claim 29, Miller fails to teach *characters within the digital keyboard are displayed in rings with about half of the characters in at least one ring ordered alphabetically in a counter-clockwise order and the remaining characters in the at least one ring organized alphabetically in a clockwise order.* However, Lee teaches a software keyboard system using the trace direction of a stylus, in which a key includes a plurality of key codes, and thus the key code is selected in accordance with the trace of the stylus drawn on the key (Col. 1, lines 52-56; compare to Claim 29, ***"... characters within the digital keyboard are displayed in rings with about half of the characters in at least one ring ordered alphabetically in a counter-clockwise order and the***

remaining characters in the at least one ring organized alphabetically in a clockwise order"). Lee fails to teach *rings organized alphabetically in a clockwise and counter-clockwise order.* However, Lee does teach a method that saves screen space for characters of a digital keyboard. Therefore, it would have been obvious to one of ordinary skill in the art at the time of invention to combine the teachings of Miller, Skinner and Lee providing the benefit of more efficient use of screen space.

In regard to dependent Claim 34, Miller fails to teach *displaying the digital keyboard in response to a user selection, and hiding the digital keyboard in response to another user selection.* However, Skinner teaches when a user taps button (520) or buttons (325) with the stylus (80), a virtual keyboard window opens on screen (105) along with data entry window (310)(Col. 7, lines 20-22; compare to Claim 34, ***"... displaying the digital keyboard in response to a user selection, and hiding the digital keyboard in response to another user selection"***). Skinner fails to specifically teach *hiding the digital keyboard in response to another user selection.* However, it would have been obvious to one of ordinary skill in the art at the time of invention to combine the teachings of Miller, Skinner and Lee providing the benefit of displaying and using a digital keyboard.

12. Claim 35 is rejected under 35 U.S.C. 103(a) as being unpatentable over Miller in view of Skinner and in further view of LaGrange et al. (hereinafter LaGrange, U.S. Patent No. 5,914,708).

In regard to dependent Claim 35, Miller fails to teach *sensing for the pointing device with a proximity sensing input surface, displaying the digital keyboard when the pointing device is detected within a predetermined distance of a proximity sensing input surface, and hiding the digital keyboard when the pointing device not detected within the predetermined distance of the proximity sensing input surface*. However, LaGrange teaches a system comprising a conductive stylus used in conjunction with a capacitance sensitive touch pad, said system providing at least two different signals to an associated computer system. The stylus is a pen-like device having an actuable switch which when actuated substantially increases the capacitive disturbance caused by the conductive stylus on the touch pad. Before actuation, the stylus creates a capacitive disturbance sufficient for circuitry in the touch pad to measure as crossing a first predefined capacitive disturbance threshold when the foam covered conductive stylus tip is brought in contact with the surface of the touch pad. When the switch is actuated, the capacitive disturbance measured by the touch pad increases sufficient to cross a second predefined capacitive disturbance threshold. An associated computer program for drawing on a computer display places a cursor on the display when the first threshold is crossed. The computer program begins drawing on the display beginning at the cursor location when the switch is actuated causing the second threshold to be crossed. Placing a conductive foam cover over the conductive stylus tip results in the measured capacitive disturbance being amplified to thereby increase the magnitude of the capacitive disturbance of the stylus (see Abstract). Compare to Claim 35,***"... sensing for the pointing device with a proximity sensing input surface, displaying the***

digital keyboard when the pointing device is detected within a predetermined distance of a proximity sensing input surface, and hiding the digital keyboard when the pointing device not detected within the predetermined distance of the proximity sensing input surface". LaGrange does not specifically teach displaying and hiding a digital keyboard. However, LaGrange does teach a method by which tools such as a digital keyboard can be activated and deactivated by a stylus device on a proximity sensitive screen. Therefore, it would have been obvious to one of ordinary skill in the art at the time of invention to combine the teachings of Miller, Skinner, and LaGrange providing the benefit of sensing the proximity of a pointing device to a touch-sensitive screen.

13. Claim 36 is rejected under 35 U.S.C. 103(a) as being unpatentable over Miller in view of Skinner and in further view of Bi et al. (hereinafter Bi, U.S. Patent No. 6,262,719).

In regard to dependent Claim 36, Miller fails to teach *displaying a cursor on a screen that tracks movement with the pointing device including displaying the cursor over the digital keyboard when the digital keyboard is active*. However, Bi teaches a passive stylus that can be used in either a pen mode or a mouse mode. In a mouse mode, however, a cursor may be generated which follows the "tip" of the pen (Col. 3, lines 55-61). Bi also teaches a virtual keyboard as part of the GUI. Activation of the keys on the virtual keyboard is by way of the stylus or by finger input (Col. 3, lines 62-65; compare to Claim 36, ***"... displaying a cursor on a screen that tracks movement***

with the pointing device including displaying the cursor over the digital keyboard when the digital keyboard is active"). Bi does not specifically teach *displaying the cursor over the digital keyboard when the digital keyboard is active*. However, Bi does teach a cursor and a virtual keyboard, the activation of which is done by the way of a stylus or finger leading one of ordinary skill in the at the time of invention to combine the teachings of Miller, Skinner, and Bi providing the benefit of a cursor that follows the movement of a stylus on a touch-sensitive screen.

14. Claims 40-42 are rejected under 35 U.S.C. 103(a) as being unpatentable over Miller in view of Bi.

In regard to dependent Claim 40, Miller fails to teach *displaying a cursor on a screen that tracks movement with the pointing device*. However, Bi teaches a passive stylus that can be used in either a pen mode or a mouse mode. In a mouse mode, however, a cursor may be generated which follows the "tip" of the pen (Col. 3, lines 55-61). Bi also teaches a virtual keyboard as part of the GUI. Activation of the keys on the virtual keyboard is by way of the stylus or by finger input (Col. 3, lines 62-65; compare to Claim 40, ***"... displaying a cursor on a screen that tracks movement with the pointing device"***). It would have been obvious to one of ordinary skill in the art at the time of invention to combine the teachings of Miller and Bi providing the benefit of a cursor that follows the movement of a stylus on a touch-sensitive screen.

In regard to dependent Claim 41, Miller fails to teach *the cursor is displayed so as to track the movement of the pointing device precisely*. However, Bi teaches a

passive stylus that can be used in either a pen mode or a mouse mode. In a mouse mode, however, a cursor may be generated which follows the "tip" of the pen (Col. 3, lines 55-61). Bi also teaches a virtual keyboard as part of the GUI. Activation of the keys on the virtual keyboard is by way of the stylus or by finger input (Col. 3, lines 62-65; compare to Claim 41, ***"... the cursor is displayed so as to track the movement of the pointing device precisely"***). It would have been obvious to one of ordinary skill in the art at the time of invention to combine the teachings of Miller and Bi providing the benefit of a cursor that follows the movement of a stylus on a touch-sensitive screen.

In regard to dependent Claim 42, Miller fails to teach *the cursor is displayed so as to move about the screen a distance that is relative to the movement of the pointing device*. However, Bi teaches a passive stylus that can be used in either a pen mode or a mouse mode. In a mouse mode, however, a cursor may be generated which follows the "tip" of the pen (Col. 3, lines 55-61). Bi also teaches a virtual keyboard as part of the GUI. Activation of the keys on the virtual keyboard is by way of the stylus or by finger input (Col. 3, lines 62-65; compare to Claim 42, ***"... the cursor is displayed so as to move about the screen a distance that is relative to the movement of the pointing device"***). It would have been obvious to one of ordinary skill in the art at the time of invention to combine the teachings of Miller and Bi providing the benefit of a cursor that follows the movement of a stylus on a touch-sensitive screen.

15. Claim 43 is rejected under 35 U.S.C. 103(a) as being unpatentable over Miller in view of Bi and in further view of LaGrange.

In regard to dependent Claim 43, Miller fails to teach *the cursor is displayed on the screen in a position remote from the pointing device*. However, LaGrange teaches a system comprising a conductive stylus used in conjunction with a capacitance sensitive touch pad, said system providing at least two different signals to an associated computer system. The stylus is a pen-like device having an actuable switch which when actuated substantially increases the capacitive disturbance caused by the conductive stylus on the touch pad. Before actuation, the stylus creates a capacitive disturbance sufficient for circuitry in the touch pad to measure as crossing a first predefined capacitive disturbance threshold when the foam covered conductive stylus tip is brought in contact with the surface of the touch pad. When the switch is actuated, the capacitive disturbance measured by the touch pad increases sufficient to cross a second predefined capacitive disturbance threshold. An associated computer program for drawing on a computer display places a cursor on the display when the first threshold is crossed. The computer program begins drawing on the display beginning at the cursor location when the switch is actuated causing the second threshold to be crossed. Placing a conductive foam cover over the conductive stylus tip results in the measured capacitive disturbance being amplified to thereby increase the magnitude of the capacitive disturbance of the stylus (see Abstract). Compare to Claim ***"... the cursor is displayed on the screen in a position remote from the pointing device"***. It would have been obvious to one of ordinary skill in the art at the time of invention to combine the teachings of Miller, Bi and LaGrange providing the benefit of sensing the proximity of a pointing device to a touch-sensitive screen.

16. Claims 44-45 are rejected under 35 U.S.C. 103(a) as being unpatentable over Miller in view of Bi and in further view of Skinner.

In regard to dependent Claim 44, Miller fails to teach *displaying the digital keyboard near where a pointing device is located in electronic text*. However, Skinner teaches a virtual keyboard screen (315) below a data entry window (310), (see Fig. 6). Compare to Claim 44, ***"... displaying the digital keyboard near where a pointing device is located in electronic text"***). It would have been obvious to one of ordinary skill in the art at the time of invention to combine the teachings of Miller, Bi and Skinner providing the benefit of placing a digital keyboard in a convenient location on a touch-sensitive screen.

In regard to dependent Claim 45, Miller fails to teach *displaying the digital keyboard just below or above a line of text that is being created or edited*. However, Skinner teaches a virtual keyboard screen (315) below a data entry window (310), (see Fig. 6). Compare to Claim 45, "***... displaying the digital keyboard just below or above a line of text that is being created or edited"***). It would have been obvious to one of ordinary skill in the art at the time of invention to combine the teachings of Miller, Bi and Skinner providing the benefit of placing a digital keyboard in a convenient location on a touch-sensitive screen.

17. Claims 58-60 and 65-67 are rejected under 35 U.S.C. 103(a) as being unpatentable over LaGrange in view of Skinner and in further view of Miller.

In regard to dependent Claim 58, LaGrange fails to teach *displaying a digital keyboard on the user interface of the personal computing device when a user is entering text a keystroke at a time.* However, Skinner teaches a "virtual keyboard". Characters can be entered into the computer system by a user interacting with (e.g., tapping) the displayed characters of the virtual keyboard (see Abstract; compare to Claim 58, ***"... (a) displaying a digital keyboard on the user interface of the personal computing device when a user is entering text a keystroke at a time"***). Skinner fails to teach *obtaining a dynamically generated list of completion candidates based on a partial text entry entered via the digital keyboard.* However, Miller teaches a text completion system that automatically displays a list of completion suggestions for a partial data entry in response to a pause in receipt of the data entry. The text completion system applies search criteria to the partial data entry. If the partial data entry satisfies the search criteria the text completion system obtains a prioritized list of word predictions for the partial data entry from the word prediction system (Col. 7, lines 66-67, Col. 8, lines 1-5). Miller also teaches that the prioritized list of completion suggestions is typically displayed in a pop-up list box in a non-intrusive manner (Col. 8, lines 12-13). Miller also teaches that the user may accept a completion suggestion from the list by touching a stylus to the display screen over the position of the desired completion suggestion (Col. 8, lines 17-19). Miller also teaches deactivating the search list in step (428) of Fig.4. Compare to Claim 58, "***(b) obtaining a dynamically generated list of completion candidates based on a partial text entry entered via the digital keyboard".*** Miller also teaches a text completion system that monitors the

entry of a stream of characters into a data file associated with a program module running on a computer system. The stream of characters defines a plurality of complete data entries followed by a partial data entry, which are displayed on a display screen. (Col. 4, lines 63-67; Col. 5, line 1; compare to Claim 58, ***(c) monitoring for a change in the type of user input"***). Miller also teaches a text completion system that automatically displays a list of completion suggestions for a partial data entry in response to a pause in receipt of the data entry (Col. 7, lines 66-67, Col. 8, lines 1-2; compare to Claim 58, ***"(d) if the type of user input corresponds to activating a list of completion candidates, replacing the digital keyboard with a list of completion candidates retrieved from a dictionary and waiting for further user input"***). Miller also teaches at step (410) of Fig. 4 if the partial data entry does not satisfy the search criteria, then go to step (402) which waits to receive another character. Compare to Claim 58, ***"(e) if the user input corresponds to terminating use of the list of completion candidates once activates, replacing the list of completion candidates with the digital keyboard and waiting for further user input"***. It would have been obvious to one of ordinary skill in the art at the time of invention to combine the teachings of LaGrange, Skinner and Miller providing the benefit of a text auto-completion system for a device containing a touch-sensitive screen.

In regard to dependent Claim 59, LaGrange fails to teach *displaying the digital keyboard on the user interface of the personal computing device when a user is entering text a keystroke at a time.* However, Skinner teaches a "virtual keyboard". Characters can be entered into the computer system by a user interacting with (e.g.,

tapping) the displayed characters of the virtual keyboard (see Abstract; compare to Claim 59, ***"... (a) displaying the digital keyboard on the user interface of the personal computing device when a user is entering text a keystroke at a time"***). Skinner fails to teach *obtaining a dynamically generated list of completion candidates from a dictionary based on a partial text entry entered via the digital keyboard.* However, Miller teaches a text completion system that automatically displays a list of completion suggestions for a partial data entry in response to a pause in receipt of the data entry. The text completion system applies search criteria to the partial data entry. If the partial data entry satisfies the search criteria the text completion system obtains a prioritized list of word predictions for the partial data entry from the word prediction system (Col. 7, lines 66-67, Col. 8, lines 1-5). Miller also teaches that the prioritized list of completion suggestions is typically displayed in a pop-up list box in a non-intrusive manner (Col. 8, lines 12-13). Miller also teaches that the user may accept a completion suggestion from the list by touching a stylus to the display screen over the position of the desired completion suggestion (Col. 8, lines 17-19). Miller also teaches deactivating the search list in step (428) of Fig.4. Compare to Claim 59, ***"(b) obtaining a dynamically generated list of completion candidates from a dictionary based on a partial text entry entered via the digital keyboard"***). Miller fails to teach *displaying simultaneously both the digital keyboard and the list of completion candidates.* However, Skinner teaches a method and system for providing simultaneous data entry for a computer system having both on-screen keyboard entry and mechanisms for handwriting recognition entry (Col.2, lines 54-57; compare to Claim 59, "***(c) displaying***

simultaneously both the digital keyboard and the list of completion candidates"). It would have been obvious to one of ordinary skill in the art at the time of invention to combine the teachings of LaGrange, Skinner and Miller providing the benefit of a text auto-completion system for a device containing a touch-sensitive screen.

In regard to dependent Claim 60, LaGrange fails to teach *displaying the list of completion candidates as soon as the list of completion candidates is generated.* However, Miller teaches that if the partial data entry satisfies the search criteria, the text completion system obtains a prioritized list of word predictions from a word completion system (Col. 12, lines 29-31; compare to Claim 60, ***"... displaying the list of completion candidates as soon as the list of completion candidates is generated"***). It would have been obvious to one of ordinary skill in the art at the time of invention to combine the teachings of LaGrange, Skinner and Miller providing the benefit of a text auto-completion system for a device containing a touch-sensitive screen displaying a list of completion candidates.

In regard to dependent Claim 65, LaGrange fails to teach *displaying a digital keyboard on the user interface of the personal computing device when a user is entering text a keystroke at a time.* However, Skinner teaches a "virtual keyboard". Characters can be entered into the computer system by a user interacting with (e.g., tapping) the displayed characters of the virtual keyboard (see Abstract; compare to Claim 65, ***"... (a) ... displaying a digital keyboard on the user interface of the personal computing device when a user is entering text a keystroke at a time"***). Skinner fails to teach *obtaining a dynamically generated list of completion candidates*

based on a partial text entry entered via the digital keyboard. However, Miller teaches a text completion system that automatically displays a list of completion suggestions for a partial data entry in response to a pause in receipt of the data entry. The text completion system applies search criteria to the partial data entry. If the partial data entry satisfies the search criteria the text completion system obtains a prioritized list of word predictions for the partial data entry from the word prediction system (Col. 7, lines 66-67, Col. 8, lines 1-5). Miller also teaches that the prioritized list of completion suggestions is typically displayed in a pop-up list box in a non-intrusive manner (Col. 8, lines 12-13). Miller also teaches that the user may accept a completion suggestion from the list by touching a stylus to the display screen over the position of the desired completion suggestion (Col. 8, lines 17-19). Miller also teaches deactivating the search list in step (428) of Fig.4. Compare to Claim 65, "***(b) ... obtaining a dynamically generated list of completion candidates based on a partial text entry entered via the digital keyboard.***" Miller teaches a text completion system that monitors the entry of a stream of characters into a data file associated with a program module running on a computer system. The stream of characters defines a plurality of complete data entries followed by a partial data entry, which are displayed on a display screen. (Col. 4, lines 63-67; Col. 5, line 1; compare to Claim 65, ***"(c) ... monitoring for a change in the type of user input"***). Miller also teaches a text completion system that automatically displays a list of completion suggestions for a partial data entry in response to a pause in receipt of the data entry (Col. 7, lines 66-67, Col. 8, lines 1-2; compare to Claim 65, ***"(d) ... replacing the digital keyboard with a list of completion candidates***

retrieved from a dictionary and waiting for further user input if the type of user input corresponds to activating the list of completion candidates"). Miller also teaches at step (410) of Fig. 4 if the partial data entry does not satisfy the search criteria, then go to step (402) which waits to receive another character. Compare to Claim 65, ***"(e) ... replacing the list of completion candidates with the digital keyboard and waiting for further user input if the user input corresponds to terminating use of the list of completion candidates once activated"***). It would have been obvious to one of ordinary skill in the art at the time of invention to be motivated to combine the teachings of LaGrange, Skinner and Miller providing the benefit of an auto-completion system for a device with a touch-sensitive screen.

In regard to dependent Claim 66, LaGrange fails to teach *displaying the digital keyboard on the user interface of the personal computing device when a user is entering text a keystroke at a time.* However, Skinner teaches a "virtual keyboard". Characters can be entered into the computer system by a user interacting with (e.g., tapping) the displayed characters of the virtual keyboard (see Abstract; compare to Claim 66, ***"... (a) ... displaying the digital keyboard on the user interface of the personal computing device when a user is entering text a keystroke at a time"***). Skinner fails to teach *obtaining a dynamically generated list of completion candidates from a based on a partial text entry entered via the digital keyboard.* However, Miller teaches a text completion system that automatically displays a list of completion suggestions for a partial data entry in response to a pause in receipt of the data entry. The text completion system applies search criteria to the partial data entry. If the partial

data entry satisfies the search criteria the text completion system obtains a prioritized list of word predictions for the partial data entry from the word prediction system (Col. 7, lines 66-67, Col. 8, lines 1-5). Miller also teaches that the prioritized list of completion suggestions is typically displayed in a pop-up list box in a non-intrusive manner (Col. 8, lines 12-13). Miller also teaches that the user may accept a completion suggestion from the list by touching a stylus to the display screen over the position of the desired completion suggestion (Col. 8, lines 17-19). Miller also teaches deactivating the search list in step (428) of Fig.4. Compare to Claim 66, ***"(b) ... obtaining a dynamically generated list of completion candidates from a based on a partial text entry entered via the digital keyboard"***). Miller fails to teach *displaying simultaneously both the digital keyboard and the list of completion candidates*. However, Skinner teaches a method and system for providing simultaneous data entry for a computer system having both on-screen keyboard entry and mechanisms for handwriting recognition entry (Col.2, lines 54-57; compare to Claim 66, ***"(c) ... displaying simultaneously both the digital keyboard and the list of completion candidates"***). It would have been obvious to one of ordinary skill in the art at the time of invention to be motivated to combine the teachings of LaGrange, Skinner and Miller providing the benefit of an auto-completion system for a device with a touch-sensitive screen.

In regard to dependent Claim 67, LaGrange fails to teach *displaying the list of completion candidates as soon as the list of completion candidates is generated.* However, Miller teaches that if the partial data entry satisfies the search criteria, the text completion system obtains a prioritized list of word predictions from a word completion

system (Col. 12, lines 29-31; compare to Claim 67, ***"... displaying the list of completion candidates as soon as the list of completion candidates is generated"***). It would have been obvious to one of ordinary skill in the art at the time of invention to be motivated to combine the teachings of LaGrange, Skinner and Miller providing the benefit of an auto-completion system for a device with a touch-sensitive screen.

18. Claims 61 and 68 are rejected under 35 U.S.C. 103(a) as being unpatentable over LaGrange in view of Skinner.

In regard to dependent Claim 61, LaGrange fails to teach *swapping between displaying one digital keyboard layout for the digital keyboard and at least one other digital keyboard layout in response to user input*. However, Skinner teaches display of multiple keyboards controlled by buttons. In this case, button (430) relates to alphabetic characters, button (440) relates to numeric characters, and button (450) relates to international characters (see Fig. 7a); compare to Claim 61, ***"... swapping between displaying one digital keyboard layout for the digital keyboard and at least one other digital keyboard layout in response to user input"***). It would have been obvious to one of ordinary skill in the art at the time of invention to combine the teachings of LaGrange and Skinner providing the benefit of a text auto-completion system for a device containing a touch-sensitive screen.

In regard to dependent Claim 68, LaGrange fails to teach *swapping between displaying one digital keyboard layout for the digital keyboard and at least one other*

digital keyboard layout in response to user input. However, Skinner teaches display of multiple keyboards controlled by buttons. In this case, button (430) relates to alphabetic characters, button (440) relates to numeric characters, and button (450) relates to international characters (see Fig. 7a); compare to Claim 68, ***"... swapping between displaying one digital keyboard layout for the digital keyboard and at least one other digital keyboard layout in response to user input"***). It would have been obvious to one of ordinary skill in the art at the time of invention to be motivated to combine the teachings of LaGrange and Skinner providing the benefit of an auto-completion system for a device with a touch-sensitive screen.

19. Claims 62 and 69 are rejected under 35 U.S.C. 103(a) as being unpatentable over LaGrange in view of Niemeier.

In regard to dependent Claim 62, LaGrange fails to teach *configuring a digital keyboard to include a plurality of characters assigned to predetermined locations within a layout for the digital keyboard according to a predetermined frequency distribution associated with the plurality of characters, the plurality of characters including less commonly characters used and more commonly used characters based on the predetermined frequency distribution*. However, Niemeier teaches a digital keyboard including a plurality of characters in predetermined locations based on any number of layouts. Once a key is depressed, a list of temporary keys predetermined by the study of word frequency and the sequence of letters in the language appear around the depressed key. In this arrangement the most often used keys or sequences of keys are

located closer to the depressed key than the lesser used key or keys (Col. 5, lines 15-25, Figs 4-32; compare to Claim 62, ***"... (a) configuring a digital keyboard to include a plurality of characters assigned to predetermined locations within a layout for the digital keyboard according to a predetermined frequency distribution associated with the plurality of characters, the plurality of characters including less commonly characters used and more commonly used characters based on the predetermined frequency distribution;*** and ***(b) displaying the digital keyboard on a graphical user interface with the less commonly used characters displayed substantially further from a center of the digital keyboard that the more commonly used characters"***. It would have been obvious to one of ordinary skill in the art at the time of invention to combine the teachings of LaGrange and Niemeier providing the benefit of using a virtual keyboard in an efficient manner.

In regard to dependent Claim 69, LaGrange fails to teach *configuring the digital keyboard to include a plurality of characters assigned to predetermined locations within a layout for the digital keyboard according to a predetermined frequency distribution associated with the plurality of characters, the plurality of characters including less commonly used characters and more commonly characters used and more commonly used characters based on the predetermined frequency distribution*. However, Niemeier teaches a digital keyboard including a plurality of characters in predetermined locations based on any number of layouts. Once a key is depressed, a list of temporary keys predetermined by the study of word frequency and the sequence of letters in the language appear around the depressed key. In this arrangement the most often used

keys or sequences of keys are located closer to the depressed key than the lesser used key or keys (Col. 5, lines 15-25, Figs 4-32; compare to Claim 69, ***"... (a) ... configuring the digital keyboard to include a plurality of characters assigned to predetermined locations within a layout for the digital keyboard according to a predetermined frequency distribution associated with the plurality of characters, the plurality of characters including less commonly used characters and more commonly characters used and more commonly used characters based on the predetermined frequency distribution"*** and ***(b) ... displaying the digital keyboard on the user interface with the less commonly used characters displayed substantially further from a center of the digital keyboard than the more commonly used characters"***). It would have been obvious to one of ordinary skill in the art at the time of invention to combine the teachings of LaGrange and Niemeier providing the benefit of using a virtual keyboard in an efficient manner.

20. Claim 63 is rejected under 35 U.S.C. 103(a) as being unpatentable over LaGrange in view of Miller.

In regard to dependent Claim 63, LaGrange fails to teach of *a computer-readable medium having stored instructions for use in the execution of the method of Claim 57.* However, Miller teaches a text completion system that automatically displays a list of completion suggestions for a partial data entry ... (see Abstract; compare to Claim 63, ***"A computer-readable medium having stored instructions for use in the execution of the method of Claim 57"***). It would have been obvious to one of ordinary skill in the

art at the time of invention to combine the teachings of LaGrange and Miller providing the benefit of a word auto-completion system.

21. Claims 70-71, 73-79, and 80 are rejected under 35 U.S.C. 103(a) as being unpatentable over Skinner in view of Miller.

In regard to independent Claim 70, Skinner teaches a "virtual keyboard". Characters can be entered into the computer system by a user interacting with (e.g., tapping) the displayed characters of the virtual keyboard (see Abstract; compare to Claim 70, ***"... (a) displaying the digital keyboard on a user interface of the personal computing device when a user is entering text a keystroke at a time"***). Skinner does not specifically teach *monitoring for user input*. However, Miller teaches a text completion system that monitors the entry of a stream of characters into a data file associated with a program module running on a computer system. The stream of characters defines a plurality of complete data entries followed by a partial data entry, which are displayed on a display screen. (Col. 4, lines 63-67; Col. 5, line 1; compare to Claim 70, ***"(b) monitoring for user input"***). Miller also teaches that in response to the pause, the text completion system determines whether the partial data entry satisfies search criteria. For example, the text completion system may determine whether the partial data entry satisfies the search criteria by receiving a user command establishing a predetermined number of characters. The text completion system may then determine whether the partial data entry includes at least the predetermined number of characters. If the partial data entry satisfies the search criteria, the text completion system obtains a

prioritized list of word predictions for the partial data entry from a word prediction system (Col. 5, lines 4-14; compare to Claim 70, ***"(c) if the user input signal corresponds to activating an automated search to obtain a list of completion candidates based on a partial text entry received by the personal computing device, replacing the digital keyboard with the search list containing the list of completion candidates and waiting for further user input"***). Miller also teaches that once the completion suggestions have been displayed, the text completion system may receive an acceptance command associated with a particular one of the completion suggestions. In response to the acceptance command, the text completion system completes the partial data entry with the additional characters of the particular completion suggestion and discontinues the display of the prioritized list of completion suggestions. In addition, before receiving the acceptance command, the text completion system may receive a selection command associated with the particular completion suggestion. This selection command changes the completion suggestion that is selected for acceptance by the user (Col. 5, lines 28-39; compare to Claim 70, ***"(d) if the user input signal corresponds to terminating an automated search, replacing the search list with the digital keyboard and waiting for further user input"***). It would have been obvious to one of ordinary skill in the art at the time of invention to combine the teachings of Skinner and Miller providing the benefit of obtaining a list of completion candidates based on a partial text entry.

In regard to dependent Claim 71, Skinner fails to teach that *the user input signal corresponds to activating the automated search to obtain the list of completion*

candidates based on a partial text entry received by the personal computing device when a character in the digital keyboard remains selected by the pointing device for a predetermined time limit. However, Miller teaches that in response to the pause, the text completion system determines whether the partial data entry satisfies search criteria. For example, the text completion system may determine whether the partial data entry satisfies the search criteria by receiving a user command establishing a predetermined number of characters. The text completion system may then determine whether the partial data entry includes at least the predetermined number of characters. If the partial data entry satisfies the search criteria, the text completion system obtains a prioritized list of word predictions for the partial data entry from a word prediction system (Col. 5, lines 4-14; compare to Claim 71, ***"... the user input signal corresponds to activating the automated search to obtain the list of completion candidates based on a partial text entry received by the personal computing device when a character in the digital keyboard remains selected by the pointing device for a predetermined time limit"***). It would have been obvious to one of ordinary skill in the art at the time of invention to combine the teachings of Skinner and Miller providing the benefit of obtaining a list of completion candidates based on a partial text entry.

In regard to dependent method Claim 73, Skinner fails to teach that *the user input signal corresponds to terminating the automated search when a button on a mouse is selected.* However, Miller teaches that the user may accept a completion suggestion from the list by touching a stylus to the display screen to the display screen over the position of the desired completion suggestion, or by using the arrow keys to

select a completion suggestion and the "enter" key to accept the selected completion suggestion (Col. 8, lines 17-21; compare to Claim 73, ***"... the user input signal corresponds to terminating the automated search when a button on a mouse is selected"***). Miller does not explicitly teach when a button on a mouse is selected. However, one of ordinary skill in the art at the time of invention would have been motivated to assume that any combination of regular keys, function keys, or mouse buttons would have been used with the pointing device to achieve the desired effect.

In regard to dependent Claim 74, Skinner fails to teach the user input signal corresponds to terminating the automated search when a gesture is made with the pointing device towards a completion candidate in the search list to select the completion candidate and another user input signal is received indicating acceptance by the user of the completion candidate. However, Miller teaches that once the completion suggestions have been displayed, the text completion system may receive an acceptance command associated with a particular one of the completion suggestions. In response to the acceptance command, the text completion system completes the partial data entry with the additional characters of the particular completion suggestion and discontinues the display of the prioritized list of completion suggestions. In addition, before receiving the acceptance command, the text completion system may receive a selection command associated with the particular completion suggestion. This selection command changes the completion suggestion that is selected for acceptance by the user (Col. 5, lines 28-39; compare to Claim 74, ***"... the user input signal corresponds to terminating the automated search when a gesture is made with***

the pointing device towards a completion candidate in the search list to select the completion candidate and another user input signal is received indicating acceptance by the user of the completion candidate"). It would have been obvious to one of ordinary skill in the art at the time of invention to combine the teachings of Skinner and Miller providing the benefit of detecting gestures.

In regard to dependent Claim 75, Skinner fails to teach the user input signal corresponds to terminating the automated search when a gesture is made with the pointing device in a direction associated with a desired completion candidate and a further action is made with the pointing device indicating termination of the automated search. However, Miller teaches that once the completion suggestions have been displayed, the text completion system may receive an acceptance command associated with a particular one of the completion suggestions. In response to the acceptance command, the text completion system completes the partial data entry with the additional characters of the particular completion suggestion and discontinues the display of the prioritized list of completion suggestions. In addition, before receiving the acceptance command, the text completion system may receive a selection command associated with the particular completion suggestion. This selection command changes the completion suggestion that is selected for acceptance by the user (Col. 5, lines 28-39; compare to Claim 75, ***"... the user input signal corresponds to terminating the automated search when a gesture is made with the pointing device in a direction associated with a desired completion candidate and a further action is made with the pointing device indicating termination of the automated search"***). It would have

been obvious to one of ordinary skill in the art at the time of invention to combine the teachings of Skinner and Miller providing the benefit of detecting gestures.

In regard to dependent method Claim 76, Skinner fails to teach *preparing to receive a new partial text entry once the partial text entry is replaced with a completion candidate from the search list.* However, Miller teaches in Fig. 2B the graphical user interface (201) after the user has entered an acceptance command for a selected text completion suggestion. The transition from Fig 2A to Fig. 2B illustrates the effect of a user command accepting the completion suggestion "extremely" for the partial data entry "ext". This acceptance command causes the partial data entry "ext" to be completed with the additional characters "remely". The display of the pop-up box is then discontinued (Col. 13, lines 20-29; compare to Claim 76, ***"... preparing to receive a new partial text entry once the partial text entry is replaced with a completion candidate from the search list"***). It would have been obvious to one of ordinary skill in the art at the time of invention to combine the teachings of Skinner and Miller providing the benefit of starting new text entry.

In regard to dependent method Claim 77, Skinner fails to teach *receiving an end-of-entry signal and preparing to receive a new partial text entry once the end-of-entry signal is received.* However, Miller teaches that an acceptance command causes the partial data entry "ext" to be completed with the additional characters "remely". The display of the pop-up box is then discontinued (Col. 13, lines 25-29; compare to Claim 77, ***"... receiving an end-of-entry signal and preparing to receive a new partial text entry once the end-of-entry signal is received"***). It would have been obvious to one

of ordinary skill in the art at the time of invention to combine the teachings of Skinner and Miller providing the benefit of starting new text entry.

In regard to dependent Claim 78, Skinner fails to teach *preparing to receive a new partial text entry after the partial text entry is replaced with a completion candidate from the search list and once another user input signal is received that corresponds to an express user selection to terminate searching based on the partial text entry.* However, Miller teaches in Fig. 4 after step (426), display of completion suggestions is discontinued (428), update of word prediction is performed (430) and a go to command is issued to go to step (402) from step (432) which prepares to receive a new partial text entry. Compare to Claim 78, ***"... preparing to receive a new partial text entry after the partial text entry is replaced with a completion candidate from the search list and once another user input signal is received that corresponds to an express user selection to terminate searching based on the partial text entry"***. It would have been obvious to one of ordinary skill in the art at the time of invention to combine the teachings of Skinner and Miller providing the benefit of starting new text entry.

In regard to dependent Claim 79, Skinner fails to teach *a computer-readable medium having stored instructions for use in the execution of the method of Claim 70.* However, Miller teaches a text completion system that automatically displays a list of completion suggestions for a partial data entry ... (see Abstract; compare to Claim 79, ***"a computer-readable medium having stored instructions for use in the execution of the method of Claim 70"***). It would have been obvious to one of ordinary skill in the

art at the time of invention to combine the teachings of Skinner and Miller providing the benefit of a word auto-completion system.

In regard to independent Claim 80, Skinner teaches a "virtual keyboard". Characters can be entered into the computer system by a user interacting with (e.g., tapping) the displayed characters of the virtual keyboard (see Abstract; compare to Claim 80, ***"... (a) ... displaying the digital keyboard on the user interface when a user is entering text a keystroke at a time"***). Skinner does not specifically teach *monitoring for user input.* However, Miller teaches a text completion system that monitors the entry of a stream of characters into a data file associated with a program module running on a computer system. The stream of characters defines a plurality of complete data entries followed by a partial data entry, which are displayed on a display screen. (Col. 4, lines 63-67; Col. 5, line 1; compare to Claim 80, ***"(b) ... monitoring a user input signal"***). Miller also teaches that in response to the pause, the text completion system determines whether the partial data entry satisfies search criteria. For example, the text completion system may determine whether the partial data entry satisfies the search criteria by receiving a user command establishing a predetermined number of characters. The text completion system may then determine whether the partial data entry includes at least the predetermined number of characters. If the partial data entry satisfies the search criteria, the text completion system obtains a prioritized list of word predictions for the partial data entry from a word prediction system (Col. 5, lines 4-14; compare to Claim 80, ***"(c) ... replacing the digital keyboard with the search list containing the list of completion candidates and waiting for further***

user input, if the user input signal corresponds to activating an automated search to obtain a list of completion candidates based on a partial text entry received by the personal computing device"). Miller also teaches that once the completion suggestions have been displayed, the text completion system may receive an acceptance command associated with a particular one of the completion suggestions. In response to the acceptance command, the text completion system completes the partial data entry with the additional characters of the particular completion suggestion and discontinues the display of the prioritized list of completion suggestions. In addition, before receiving the acceptance command, the text completion system may receive a selection command associated with the particular completion suggestion. This selection command changes the completion suggestion that is selected for acceptance by the user (Col. 5, lines 28-39; compare to Claim 80, ***"(d) ... replacing the search list with the digital keyboard and waiting for further user input if the user input signal corresponds to terminating an automated search"***). It would have been obvious to one of ordinary skill in the art at the time of invention to combine the teachings of Skinner and Miller providing the benefit of obtaining a list of completion candidates based on a partial text entry.

22. Claim 72 is rejected under 35 U.S.C. 103(a) as being unpatentable over Skinner in view of Miller and in further view of LaGrange.

In regard to dependent Claim 72, Skinner fails to teach *the user input signal corresponds to terminating the automated search when the pointing device is lifted up*

from the input-sensitive surface of the personal computing device without any significant movement once the search list is displayed. However, LaGrange teaches a system comprising a conductive stylus used in conjunction with a capacitance sensitive touch pad, said system providing at least two different signals to an associated computer system. The stylus is a pen-like device having an actuable switch which when actuated substantially increases the capacitive disturbance caused by the conductive stylus on the touch pad. Before actuation, the stylus creates a capacitive disturbance sufficient for circuitry in the touch pad to measure as crossing a first predefined capacitive disturbance threshold when the foam covered conductive stylus tip is brought in contact with the surface of the touch pad. When the switch is actuated, the capacitive disturbance measured by the touch pad increases sufficient to cross a second predefined capacitive disturbance threshold. An associated computer program for drawing on a computer display places a cursor on the display when the first threshold is crossed. The computer program begins drawing on the display beginning at the cursor location when the switch is actuated causing the second threshold to be crossed. Placing a conductive foam cover over the conductive stylus tip results in the measured capacitive disturbance being amplified to thereby increase the magnitude of the capacitive disturbance of the stylus (see Abstract). Compare to Claim 72, ***"... the user input signal corresponds to terminating the automated search when the pointing device is lifted up from the input-sensitive surface of the personal computing device without any significant movement once the search list is displayed"***. It would have been obvious to one of ordinary skill in the art at the time of invention to

combine the teachings of Skinner, Miller and LaGrange providing the benefit of detecting gestures.

Conclusion

23. Claim 82 is objected to because of the following informalities: Claim 82 is identical to Claim 81. Appropriate correction is required.

24. Claim 37 would be allowable if rewritten in independent form including all of the limitations of the base claim and any intervening claims.

25. Any inquiry concerning this communication or earlier communications from the examiner should be directed to James H Blackwell whose telephone number is 703-305-0940. The examiner can normally be reached on Mon-Fri.

If attempts to reach the examiner by telephone are unsuccessful, the examiner's supervisor, Joseph H Feild can be reached on 703-305-9792. The fax phone number for the organization where this application or proceeding is assigned is 703-872-9306.

Any inquiry of a general nature or relating to the status of this application or proceeding should be directed to the receptionist whose telephone number is 703-305-3900.

James H. Blackwell
01/09/04

JOSEPH H. FEILD
PRIMARY EXAMINER